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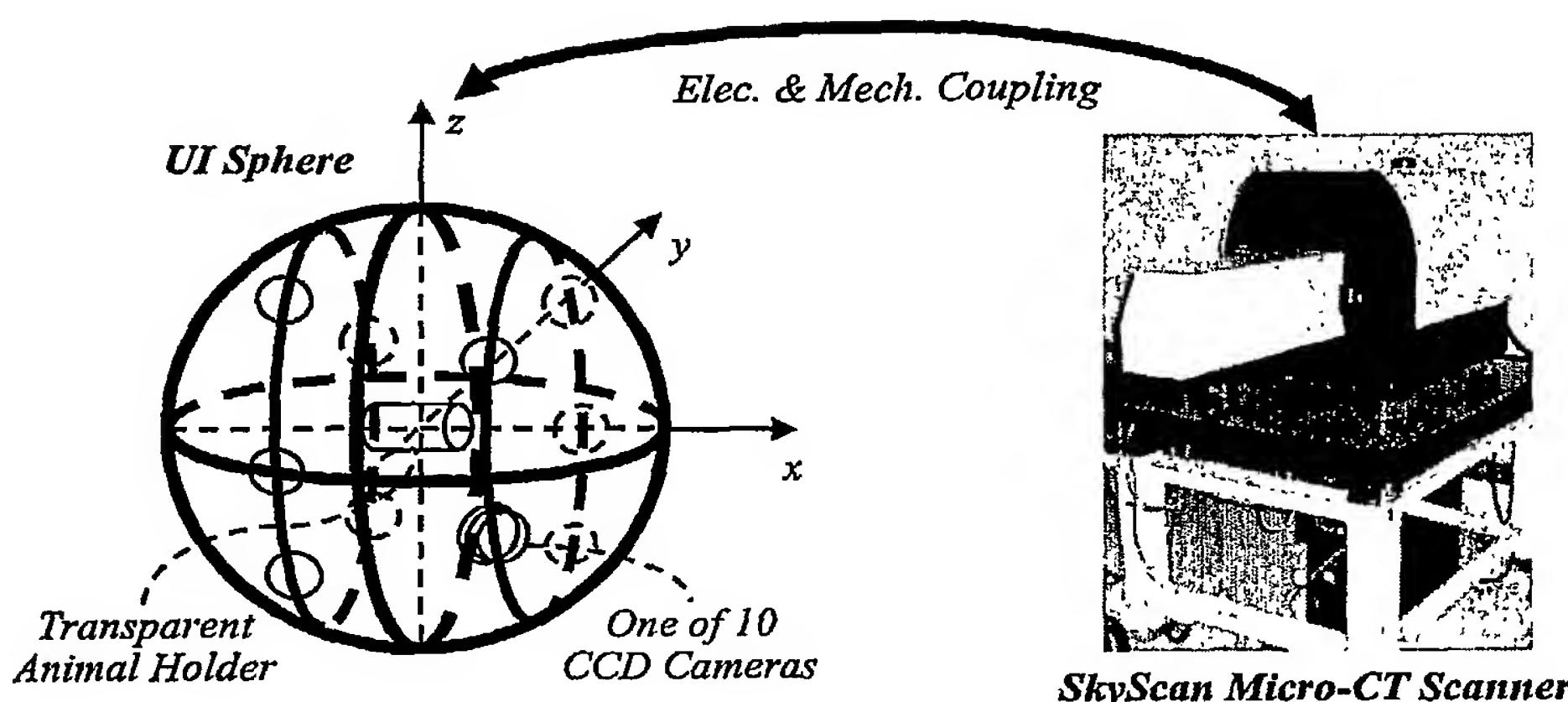
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(54) Title: SYSTEMS AND METHODS FOR BIOLUMINESCENT COMPUTED TOMOGRAPHIC RECONSTRUCTION



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(57) **Abstract:** An image of an object is synergistically reconstructed using two or multiple imaging modalities. A first reconstructed image, showing structural information of the object is produced using a first imaging modality. The first reconstructed image is segmented, and known optical properties of the object are then mapped to the first reconstructed image. Optical signal emissions from the object are detected and registered with the first reconstructed image. A second reconstructed image volume is then produced using a second imaging modality, based on the mapped optical properties after registration between the first image and the data from the second modality. The second reconstructed image depicts some optical property, such as a bioluminescent source distribution, or optical properties, such as, attenuation and scattering properties, of the object.



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International application No.

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A. CLASSIFICATION OF SUBJECT MATTER

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 US CL : 600/407,410,425,436; 382/131; 606/130; 378/21,23

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2002/0077543 A1 (GRZESZCZUK et al) 20 June 2002 (20.06.2002) paragraphs [0009] - [0012], [0023], [0024], [0027], [0035] - [0038]; figures 1 and 3	1-30
A	US 6,429,434 B1 (WATSON et al) 6 August 2002 (06.08.2002)	1-30
A	US 5,608,221 (BERTELSEN et al) 4 March 1997 (04.03.1997)	1-30

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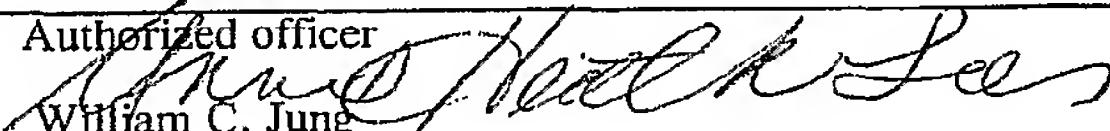
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